Government of Pakistan

National Vocational and Technical Training Commission

Blended International IT Trainings – BIITT 2025

Course Contents/ Lesson Plan

Course Title: Meta Back-End Developer Professional Certificate

Duration: 3 Months

NAVTTC HQs, Plot no. 38, Kirthar Road, H-9
Islamabad

Trainer Name	
Course Title	**Meta Back-End Developer Professional Certificate**
Objective of Course	Prepare for a career in the fast-growing field of back-end development. In this program, you'll learn in-demand skills like Python, Django, APIs, and database management to get job-ready in as little as 3 months. Back-end development focuses on building and maintaining the server-side logic, databases, and application programming interfaces (APIs) that power modern web and mobile applications. The demand for skilled back-end developers is rapidly increasing as businesses of all sizes continue to expand their digital platforms. This program will equip you with the core technical skills employers seek for back-end development roles. You'll not only gain the knowledge to start your career as a back-end developer but also build a strong foundation for future growth in specialized areas such as cloud computing, DevOps, full-stack development, or systems architecture. You'll learn the latest tools and frameworks used by industry professionals, including Python, Django, MySQL, REST APIs, and version control with Git. You'll work on hands-on projects to design, build, and deploy server-side applications, integrate APIs, manage databases, and optimize performance. By the end of the program, you'll have a portfolio of projects to showcase to potential employers and the confidence to succeed in this high-demand career path.
Course Execution Plan	Total Duration of Course: **3 Months (12 Weeks)**
	Class Hours: **3 Hours per day**
	Theory: 30% Practical: 70%
	Weekly Hours: **15 Hours Per week**
	Total Contact Hours: **200 Hours**

Learning Outcome of the Course	Throughout the program, you'll complete hands-on projects and coding assignments to build the core technical skills required for designing, developing, testing, and deploying back-end systems. You will: • Gain the technical skills required to become a qualified back-end developer • Gain the technical skills required to become a qualified back-end developer • Build a portfolio using your new skills and begin interview preparation including tips for what to expect when interviewing for engineering jobs • Learn in-demand programming skills and how to confidently use code to solve problems At the end of the program, you complete a real-world capstone project specifically designed to showcase your newly learned data analyst skills.
Companies Offering Jobs in the respective trade	These companies value the skills gained through the program: • Systems Limited • S&P Global • Careem • ibex. Pakistan • Zameen.com • Afiniti • Contour Software • Oracle • SAP • Accenture • Cisco • Deloitte • Freelancing
Job Opportunities	• Back-End Developer • Software Engineer • API Developer • Database Developer • Cloud Application Developer • Web Application Developer • Integration Engineer
No of Students	25-30

Learning Place	Labs
Instructional Resources	The following link will be accessible for students once they are enrolled in the program: https://www.coursera.org/professional-certificates/ibm-data-analyst

Scheme of Study

Sr. No	Main Topics	Theory Hrs.	Practical Hrs.	Total Hrs.
1.	Introduction to Back-End Development	12	3	15
2.	Programming in Python	5	10	15
3.	Programming in Python	4	11	15
4.	Programming in Python	3	12	15
5.	Version Control	5	10	15
6.	Introduction to Databases for Back-End Development	5	10	15
7.	Introduction to Databases for Back-End Development / Django Web Framework	4	11	15
8.	Django Web Framework	4	11	15
9.	Django Web Framework	4	11	15
10.	APIs	3	12	15
11.	The Full Stack	2	13	15
12.	Back-End Developer Capstone	3	12	15
Total		54	126	180

Scheduled Week	Module Title	Day	Learning Units	Tasks
Week 1/12	Introduction to Back-End Development	Day 1	Get started with web development	Improve your Bio page with Bootstrap
		Day 2	Introduction to HTML	
		Day 3	Introduction to CSS	
		Day 4	UI Frameworks	
		Day 5	UI Frameworks – Continued	
Week 2/12	Programming in Python	Day 1	End-of-Course Graded Assessment	Use control flow and loops to solve a problem
		Day 2	Getting Started with the Python	
		Day 3	Getting Started with the Python - Continued	
		Day 4	Getting Started with the Python - Continued	
		Day 5	Basic Programming with Python	
Week 3/12	Programming in Python	Day 1	Basic Programming with Python - Continued	Functions, loops and data structures
		Day 2	Basic Programming with Python - Continued	
		Day 3	Programming paradigms	
		Day 4	Programming paradigms - Continued	
		Day 5	Programming paradigms - Continued	
Week 4/12	Programming in Python	Day 1	Programming paradigms - Continued	Programming in Python
		Day 2	Modules, packages, libraries and tools	
		Day 3	Modules, packages, libraries and tools - Continued	
		Day 4	Modules, packages, libraries and tools - Continued	
		Day 5	End-of-Course Graded Assessment	
Week 5/12	Version Control	Day 1	Software collaboration	Managing a project in GitHub
		Day 2	Command Line	
		Day 3	Working with Git	
		Day 4	Working with Git – Continued	

		Day 5	Graded Assessment	
Week 6/12	Introduction to Databases for Back-End Development	Day 1	Introduction to Databases	Create Database, create table and insert data
		Day 2	Create, Read, Update and Delete (CRUD) Operations	
		Day 3	Create, Read, Update and Delete (CRUD) Operations - Continued	
		Day 4	Create, Read, Update and Delete (CRUD) Operations - Continued	
		Day 5	SQL Operators and sorting and filtering data	
Week 7/12	Introduction to Databases for Back-End Development / Django Web Framework	Day 1	SQL Operators and sorting and filtering data - Continued	ORDER BY and WHERE
		Day 2	Database design	
		Day 3	Database design - Continued	
		Day 4	Graded assessment	
		Day 5	Introduction to Django	
Week 8/12	Django Web Framework	Day 1	Introduction to Django - Continued	Creating a view and URL configuration
		Day 2	Views	
		Day 3	Views - Continued	
		Day 4	Views - Continued	
		Day 5	Models	
Week 9/12	Django Web Framework	Day 1	Models - Continued	Design and build a simple Django app
		Day 2	Models - Continued	
		Day 3	Templates	
		Day 4	Templates - Continued	
		Day 5	Course summary and Graded project assessment	
Week 10/12	APIs	Day 1	REST APIs	Little Lemon API project
		Day 2	REST APIs – Continued	
		Day 3	Django REST framework	
		Day 4	Advanced API development	

		Day 5	Final project assessment	
Week 11/12	The Full Stack	Day 1	Introduction to the full stack	Little Lemon booking system
		Day 2	Front-end technologies	
		Day 3	Front-end technologies - Continued	
		Day 4	The full stack using Django	
		Day 5	Final project	
Week 12/12	Back-End Developer Capstone	Day 1	Starting the Project	Capstone Project
		Day 2	Project Functionality	
		Day 3	Security and Testing	
		Day 4	Security and Testing - Continued	
		Day 5	Project Assessment	

List of Machinery / Equipment

1. Software List

Sr. No	Software Name
1.	MS Office(Installed on each PC)
2.	Operating System (Windows, Linux or other Operating Systems)
3.	Programming Languages including Pyhton, SQL, HTML & CSS

2. Minimum Qualification of Teachers / Instructor

The qualification of teachers / instructor of this course should be a minimum of bachelor's in computer science / software engineering with minimum 3 years of development experience in relevant trade.

3. Eligibility for the trainees:

As defined by NAVTTC

4. List of Machinery/Equipments

Sr. No	Name of item as per curriculum	Quantity physically available at the training location
1	Computers Minimum Core-i5 8th Generation ● LCD Display 17" with built in speakers	25
2	DSL Internet Connection (Minimum 5 MB)	Available on every PC
3	**Accessories/Devices** ● Connectors ● Multimedia ● Audio/visual aid ● White Board ● Flip Chart Board	25 each
4	**Wires, data cables, power plugs, power supply**	For every PC
5	**UPS**	Available
6	**Generator / Solar Backup**	Available
7	**Air Conditioner (2 Tons)**	Available